Original Research Article

Quality of life of the HIV patients in Agra: a cross sectional study

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ABSTRACT

Background: With antiretroviral therapy (ART) for human immunodeficiency virus infection (HIV) coming into picture, quality of life (QOL) has gained importance. Knowledge on the factors affecting QOL would be helpful in making important policy decisions and health care interventions. The aim of this study is to assess the quality of life of people living with HIV and to identify the factors influencing their QOL.

Methods: The Cross-sectional study was done among 160 HIV patients registered with ART Centre, at SNMC Agra (UP), India. QOL was assessed using HIV specific WHOQOLHIV-BREF questionnaire which has six domains. Association were find out by using chi square test for categorical variables and ANOVA were used for comparisons means scores among continuous variables. Correlation between continuous quantitative variables was found out by Pearson correlation coefficient.

Results: Mean age of the study subjects was 37.89 years and 61.2% of the participants were males. Quality of life score was highest in level of independence domain (12.79±2.28) and lowest in SRPB domain (10.51±3.63). A significant negative correlation (-0.49) was observed between age and physical domain. Male Subjects had significant better mean score in social and environmental domain. Family support associated with social relationship and psychological domain. Higher CD4 count is associated with better in psychological and SRPB domain. Younger age, female gender, rural background, shorter duration of HIV, non-intake of ART were the high risk factors of poor QOL.

Conclusions: Interventions such as ART, family, vocational and peer counselling would address these modifiable factors influencing QOL, thereby improving the QOL of PLWH.

Keywords: Human immunodeficiency virus, Quality of life, Social support, WHOQOLHIV-Bref

INTRODUCTION

Human immunodeficiency virus (HIV) infection/ acquired immunodeficiency syndrome (AIDS) is one of the serious public health problems with severe impact on various facets of human life. Globally, an estimated 36.7 million [34.0 million -39.8 million] people living with HIV in 2015. There were 2.1 million [1.8 million–2.4 million] new HIV infections worldwide, showing a 34% decline in number of new infections from 3.4 [3.1-3.7] million in 2001.[1] As per the recently released, India HIV Estimation 2015-2016 report, National adult (15–49 years) HIV prevalence in India is estimated at 0.26% (0.22%– 0.32%) in 2015. In 2015, adult HIV prevalence is estimated at 0.30% among males and at 0.22% among females.[2] Traditional health indicators such as mortality and morbidity are used to measure impact of disease burden and outcome of an intervention. These indicators only quantify the disease, but do not measure quality of life (QOL) of patients, which has been described as 'the missing measurement in health'. Even though the survival of people living with HIV (PLHIV) has improved with the advent of antiretroviral therapy (ART), their life is affected by social factors like

stigma/discrimination. Hence, quality of life (QOL) which gives a holistic picture of their health status has gained importance.[3]

Quality of life is a multi-dimensional concept. There is a lack of universally agreed definition of QOL. WHO defines QOL as "individual's perceptions of their position in life in context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". This broader definition of QOL by WHO, indicates QOL is a subjective feeling. There are many factors which affect the QOL of patients with chronic illnesses. The identification of these factors is important in order to provide better health and social care services. Several instruments for measuring QOL have been developed and used in different settings. The validity of the WHOQOL-Bref instrument is very well established.[3] There are limited studies to assess the QOL among PLWHA in this part of the country. This study assessed the QOL and some factors, influencing it among PLWHA registered at SNMC, ART Centre at Agra.

METHODS

Design and sampling

This cross sectional study was conducted during March 2016 – August 2017, based on a sample of 160 HIV patients recruited from the ART Centre of SNMC, Agra. HIV patients above 18 years willing to participate in the study were included in the study. Those HIV patients who were critically ill during the study period were excluded from the study. Ethical clearance was obtained from ethical committee of S.N. Medical College Agra.

Questionnaire

The pre-structured questionnaire consisted of 2 parts. Quality of life was assessed by WHOQOL – BREF questionnaire. Each item using 5 point Likert scale, where 1 indicates lowest (negative) perceptions and 5 indicates highest (positive) perceptions. These items were in 6 domains namely physical, psychological, level of independence, social relationships, environment and spirituality/religiousness/personal belief (SRPB). The mean score were transformed to 4–20 range. Higher the scores, better is the quality of life.[3]

Another part of the questionnaire included demographic information such as age, gender, place of residence, educational level, employment status and per capita monthly income. HIV related characteristics like time since diagnosis, ART use, and CD4 count were also collected.

Sample size calculation

Statistically valid sample size was drawn, based on reported 73% as the prevalence rate of adherence to ART among HIV-infected persons receiving care in private clinics in Mumbai, India by Shah et al.[4]

The sample size of the study group was calculated by using the formula given below:

$$N = Z^2_{\alpha/2}\, PQ/L^2$$

$Z_{\alpha/2}$ = 1.96, Value of the standard normal variate corresponding to level of significance alpha 5%

It comes as:

$$N = 3.84 * PQ/L^2$$

P is the expected prevalence= 73%,

Q = 100-P = (100- 73)%= 27%,

L is the allowable error (10-20% of P). For the present study, this has been taken as 10% of P.

N, Sample size = 147 patients

Considering 10% incomplete or unusable questionnaires, a total of 160 patients were registered & interviewed.

Collection of data

The study subjects were identified during study period at ART centre, at Sarojini Naidu Medical College, Agra. Daily 3 patients were randomly selected from the OPD register of ART centre and the process was continued till the desired sample of 160 patients was reached. Every patient, who was fulfilling the inclusion criteria and visiting the ART centre was approached during each interview period. All the subjects were informed about the purpose of the study. After obtaining the informed consent, they were interviewed separately in privacy, in a language understandable to the subjects, using a pre structured questionnaire. All the information collected was based on patients self-report, with the exception of CD4 count at the start of the treatment and at present, this information was collected from the medical records.

Data analysis

The information collected on the study schedule was transferred on the pre-designed classified tables in Microsoft excelsheet and then it was cleaned for missing values and typing errors. After which it was imported in to statistical package for social sciences (SPSS free version 22) dataset and various analysis were run as per suitability and our Aim and Objectives. For all the tests, a 'p' value of <0.05 was considered for the statistical significance. Associations were found out using Chi Square test for categorical variables. Student-t test and ANOVA were used for comparisons among continuous variables.

RESULTS

Socio-demographic characteristics

Among 160 study subjects, 61.2% were male and 38.8% were female. The overall mean age was 37.89 years (SD=9.93). The mean age of female subjects was lower (35.58) than males (39.36), the difference is however statistically insignificant. Among all study subjects, highest proportion (48.2%) of subjects belonged to the age group of 30 to 44 years. Majority (61.4%) of the participants had per capita income less than 1875, and 30.7% of the participant's illiterate with only 7% of them being widowed (Table 1).

Table 1: Distribution of study population by socio-demographic characteristics.

Variable	Grouping	N (%) Female n=62(38.8)	N (%) Male n=98(61.2)	Total N=160
Age (in years)	18-29	17 (27.5)	19 (19.4)	36 (22.4)
	30-44	32 (51.6)	45 (45.9)	77 (48.2)
	45-59	13 (20.9)	29 (29.5)	42 (26.2)
	>60	0 (0)	5 (5.2)	5 (3.2)
Residence	Urban	35 (56.4)	43 (43.8)	78 (48.8)
	Rural	27 (43.6)	55 (56.2)	82 (51.2)
Marital status	Married	55 (88.7)	77 (78.5)	132 (82.5)
	Unmarried	0 (0)	21 (21.5)	21 (13.1)
	Widow/Widower	7 (11.3)	0 (0)	7 (4.4)
Education	Illiterate	30 (48.5)	19 (19.4)	49 (30.7)
	Literate	32 (51.5)	79 (80.6)	111 (69.3)
Occupation	Employed	37 (59.9)	90 (91.8)	127 (79.2)
	Unemployed	25 (40.1)	8 (8.2)	33 (20.8)
Socioeconomic class (Modified BG Prasad's classification)	More than ₹1875	29 (46.7)	33 (33.7)	62 (38.6)
	Less than ₹1875	33 (53.3)	65 (66.3)	98 (61.4)

Note: Figure within parentheses indicate percentages.

Table 2: Distribution of study population according to HIV related characteristics (HIV disclosure to society, CD4 count, adherence to ART).

Variable	Grouping	Female (%) n=62	Male (%) n=98	Total (%) N=160
HIV disclosure	Disclosed	26 (41.9)	46 (46.9)	72 (45)
	Not Disclosed	36 (58.1)	52 (53.1)	88 (55)
Level of CD4 count	<350	40 (64.5)	70 (71.4)	110 (68.8)
	>350	22 (35.5)	28 (28.6)	50 (31.2)
Adherence to ART	More than 95%	51 (82.3)	88 (89.8)	139 (86.8)
	Less than 95%	11 (17.7)	10 (10.2)	21 (13.2)

Note: Figure within parentheses indicate percentages.

Table 3: WHO QOL domain score.

WHO QOL domain	Mean Score	SD
Physical	11.95	2.02918
Psychological	11.21	2.17381
Level of independence	12.79	2.28778
Social Relationship	11.81	2.72003
Environmental	11.47	2.15387
Spiritually/religion/personal belief (SRPB)	10.51	3.63148
Overall	12.28	2.26721

HIV related characteristics of the participants. Disclosure of HIV status to society was observed in 45% study subjects. Among male 46.95% of study subjects had disclosed their HIV status to the society while among female this proportion was 41.9%. In study population, 68.8% subjects were having their CD4 count below 350.

Table 4: Difference in QOL domains score according to socio-demographic and HIV related factors.

Groups		N	Physical Domain		Psychological Domain		Level of independence		Social domain		Environmental domains		SRPB domain	
			Score	P value	Score	P value	Score	P value	Score	P value	Score	P value	Score	P value
Gender	Male	98	12.0	0.5	11.1	0.4	12.5	0.1	12.1	0.02	11.7	0.04	10.3	0.5
	Female	62	11.8		11.3		13.1		11.2		11.0		10.7	
Residence	Rural	82	11.7	0.2	11.4	0.1	12.8	0.7	12.0	0.1	11.6	0.2	10.8	0.3
	Urban	78	12.1		10.9		12.7		11.5		11.2		10.2	
Education	Literate	111	11.8	0.4	12.7	0.02	12.9	0.1	11.2	0.4	11.2	0.4	10.9	0.4
	Illiterate	49	11.6		11.3		12.2		10.9		11.0		10.7	
Socioeconomic status	>₹1875	62	11.3	0.2	11.1	0.4	12.8	0.7	11.9	0.6	11.9	0.07	11.3	0.7
	<₹1875	98	11.2		11.0		12.6		11.5		10.5		10.2	
Family support	Yes	126	11.8	0.3	11.4	0.006	12.8	0.8	12.3	0.001	11.6	0.07	10.7	0.5
	No	34	12.2		10.4		12.7		10.4		10.9		10.5	
CD4 count	>350	62	13.4	0.4	11.7	0.01	12.7	0.4	12.0	0.3	12.0	0.1	11.0	0.01
	<350	98	13.2		10.8		12.5		11.6		11.9		10.1	
Adherence to ART	>95%	139	11.9	0.7	11.2	0.4	12.8	0.3	11.9	0.04	11.5	0.6	11.0	0.4
	<95%	21	11.8		10.8		12.3		10.7		11.2		10.6	

Among male nearly two third (71.4%) were having their CD4 count below 350 while in female group this percentage was 64.5%. Overall 13.2 percent study subjects were found to be non-adherent to ART. Adherence to ART was more among males (89.8%) as compared to females (82.3%) (Table 2).

Quality of life (QOL)

Table 3 shows the mean scores of the 6 domains of quality of life. QOL scores were high for level of independence domain (Mean=12.79, SD=2.28) and spiritually/religion/personal belief (SRPB) domain was having least score (Mean=10.51, SD=3.63). Overall mean score was derived to be 12.28 (SD=2.27). The QOL profile of subjects indicates a moderate score in all domains of QOL (Figure 1).
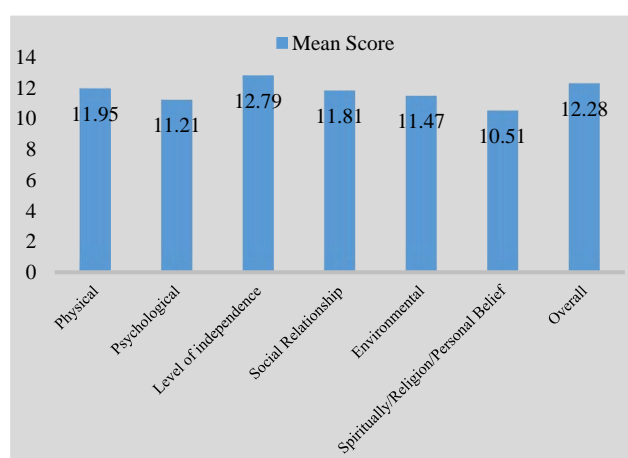

Figure 1: WHO QOL domains mean score.

Analysis of QOL domain scores observed significant difference of Gender with social domain and environment domain; education status with psychological domain; family support with psychological and social domain; CD4 count with psychological and SRPB domain; adherence to ART with social domain. However residual area and socioeconomic status were not found to be significantly associated with any of domains of QOL.

DISCUSSION

WHO has defined quality of life as 'individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns'. In our study overall domain score of 12.28 was derived in our study which is slightly lower but comparable to other studies of Rajeev et al and Mahalakshmy et al who have reported 11.5 and 13.5 overall domain scores respectively.[5,6] Highest mean score was for level of independence (12.79) whereas the lowest for SRPB domain (10.51). Similarly Mahalakshmy et al also reported highest score for level of independence and lowest score for SRPB domain.[6] Contrarily Anand et al

revealed highest score for SRPB domain (14.5) and lowest for level of independence (11.8).[7] In our study subjects from rural area were having better score in psychological, environment, level of independence, and SRPB domain of QOL while physical and social domains score were higher among urban subjects. Whereas Kumar et al observed subjects from urban area were having better score in all domains.[8] Similarly Shukla et al has found better score in physical, psychological and environment domains among rural subjects while the higher score in social domain in urban subjects.[9] In our study psychological and SRPB domain were positively correlated with CD4 count. In consonance with the present study Anand et al also found significant correlation of CD4 count with SRPB domain.[7] Unlike our study they did not found correlation of CD4 count with psychological domain. In our study significantly higher psychological and social relationship domain scores were observed for the subject living with family support as compared to those living without. Unlike our study Wig et al observed significant difference in the environment domain scores of the patients in relation to the family support.[10] On analysing the quality of life scores of HIV patients with adherence to ART, though a statistical difference was found in all 6 domains viz. physical, psychological, environmental, social, level of independence and SRPB (spiritual, religion and personal belief) domain but the difference was statistically significant only in case of social domain only. As in present study Shukla et al also reported significant difference in social domain though they also reported significant difference in environment domain.[9]

CONCLUSION

QOL in present study was found to be determined by education, income, occupation, family support and adherence to ART of the patients. QOL domains observed significant difference of Gender with social domain and environment domain; education status with psychological domain; family support with psychological and social domain; CD4 count with psychological and SRPB domain; adherence to ART with social domain. Family support and occupation provides better environment to individuals suffering from HIV/AIDS. Limitation: Sample size for the quantitative study was small and though the data is generalizable at 10% relative error, a larger sample size could have generated information closer to the reality.

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